A research on levels of information, perception status, anxiety and depression of health workers diagnosed with COVID-19

Eurasian Clinical and Analytical Medicine Original Research

Perception, anxiety, depression of health workers with COVID-19

Banu Karaca[1], Bahar Örmen[1], Esin Evren Kılıçaslan[2]
[1] Department of Infectious Diseases
[2] Department of Psychiatry, Katip Celebi University, Ataturk Research and Training Hospital, Izmir, Turkey

Abstract

Aim: This study aims to ascertain the levels of knowledge and perception towards COVID-19 that healthcare workers who have contracted the disease have while determining the disease`s psychological impact.

Material and Methods: 177 healthcare workers who had recovered from COVID-19 and 116 without a history of contraction as the control group were included. Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) were applied, in addition to an online survey measuring the knowledge about COVID-19.

Results: The levels of knowledge and perception towards COVID-19 of the healthcare workers who contracted the disease were not as high as expected.

Anxiety and depression scores were statistically significantly higher in COVID-19 ICU and in the female sex. The depression score was significantly higher in the single group and in the group without prior psychiatric disease diagnosis.

Discussion: The levels of knowledge and perception towards COVID-19 that healthcare workers of the study group were not as high as expected. The higher depression and anxiety scores in the study group especially in the Intensive Care Unit can be attributed to the closer contact with COVID-19 patients. High scores in the female sex can be associated with the female-dominated nurse population. The depression score was higher in single employees, which may be related to loneliness and anxiety about not being able to get care when they get sick. Health care workers should be informed about the disease and psychological monitoring and support should be given when needed.

Keywords

COVID-19, Healthcare Worker, Perception, Depression, Anxiety

DOI:10.4328/ECAM.10058
Received : 2023-08-25
Accepted : 2023-10-13
Published Online : 2023-10-14
Printed : 2023-10-15
Eu Clin Anal Med 2023; 11(Suppl 1):S1-4

Corresponding Author: Banu Karaca, Department of Infection Diseases, Katip Çelebi University, Atatürk Training and Research Hospital, Izmir, Turkey.
· **E-Mail:** banu.karaca@yahoo.com · **P:** +90 533 765 52 72 · **Corresponding Author ORCID ID:** https://orcid.org/0000-0003-1470-356X

This study was approved by the Ethics Committee of Turkish Ministry of Health and the Hospital`s Ethics Committee (Date: 2020-10-22, No: 1033)

How to cite this article: Banu Karaca, Bahar Örmen, Esin Evren Kılıçaslan. A research on levels of information, perception status, anxiety and depression of health workers diagnosed with COVID-19. Eu Clin Anal Med 2023; 11(Suppl 1):S1-4

Introduction

The disease caused by a new type of virus called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which appeared in December 2019, has been defined as a pandemic by the World Health Organization and is still active all over the world. As of 18.06.2021, the number of SARS-CoV-2 infected cases reached 177 108 695 and the number of deaths reached 3 840 223. Turkey, like other countries, was affected by the pandemic and at the same time, 5 359 728 cases and 49 071 deaths were reported according to the Ministry of Health data. SARS-CoV-2 is a zoonotic virus and has been identified by the World Health Organization as a group of viruses that cause emergencies such as SARS, Ebola, HIV, Nipah virus (NiV), Avian influenza (bird flu virus), and H1N1 influenza and MERS-Co-V. Healthcare workers who are at the forefront of the fight against the disease constitute the risk group for the disease. In addition, the infection of healthcare workers causes transmissions within the hospital and the community, which is important in this respect. Healthcare workers' anxiety about the disease and the risks of infecting friends and family also make individuals prone to disorders such as depression and anxiety [1]. Few studies in the literature investigate the levels of knowledge and perception towards COVID-19 and the scores of anxiety and depression that healthcare workers who have contracted the disease have. Current studies have been carried out with general healthcare workers without questioning whether they have contracted the disease. We aim to analyze the situation of healthcare workers who have been diagnosed with this disease. In this sense, in addition to general information, it was planned to question the transmission routes of the disease, clinical findings, risk assessments according to the units they work in, and their contact status. In addition, it was aimed to determine levels of depression and anxiety caused by the workload, occupational risks (infecting employees and their families), and infection risks of their colleagues.

Material and Methods

This study included 177 healthcare workers over 18 years old who had tested positive on the PCR test for SARS-CoV-2 while working at a training hospital and 116 healthcare workers with no history of contraction as a control group. The research team gathered demographic data from an online questionnaire regarding age, gender, marital status, number of children, social status, hospital duties, and work unit. In addition, contact risks, disease-related educational status, knowledge levels, sources of this knowledge, and psychiatric anamnesis were included. There were also Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) questions following these questions. The study and control group were given a web-based online questionnaire that lasted a total of ten minutes, including 25 multiple-choice, eight true or false, and six psychiatric anamnesis questions, as well as BDI (21 questions) and BAI (21 questions).

Statistical tests were performed using the SPSS 19 version (SPSS Inc., Chicago, IL, USA). Continuous variables were shown as mean value ± SD, categorical variables as the number of cases and percentage of the total number of patients. When appropriate, the student`s t-test and the Mann-Whitney U test were used to compare parametric values between the two groups. The Chi-squared test was applied to compare categorical variables. P values below 0.05 were considered statistically significant. The study approval (date: 22.10.2020, decision no: 1033) has been obtained from the Turkish Ministry of Health and the Hospital`s Ethics Committee.

Ethical Approval

Ethics Committee approval for the study was obtained.

Results

68% of the participants were of female gender (120) had an average age of 37.7 ± 10.4 years and were younger than the control group ($p<0.05$). 44% of the participants were physicians/doctors (78), 41% nurses (72), 3% laboratory assistants (2), 6% cleaning staff (10), 1% pharmacists (2), 1% biologists (1) and 6% others (11). 59% of the participants worked in the non-COVID clinic (103), 17% worked in the COVID Intensive Care Unit (29), and 25% worked in the COVID clinics (44). There were meaningful results in the questioning of information and perception levels related to the disease. The number of workers stating that one should definitely use N95 masks in the hospital was higher among the healthcare workers who had recovered from the disease than in the control group ($p<0.05$). Similarly, the number of healthcare workers, who wore two pairs of gloves and believed it was adequate to change only the top pair and care for the next patient was significantly higher in the group who suffered from the disease ($p<0.05$). After questioning the transmission routes of the disease we learned that 30% (52) of the study group were infected by the patients, 44% (75) indirectly from the hospital environment, 17% (30) by family members, and 9(15%) by friends. When asked to classify the risk of contact with healthcare workers, 46% (80) identified it as high risk, 37% (65) as moderate risk, and 17% (29%) as low risk. 72% (127) stated that they received training about the virus. When healthcare workers' sources of information about COVID-19 were evaluated, 9% (15) stated that they received training from news and press, 6% (10) from social media, 45% (79) from the official website of the Ministry of Health, 5% (9) from family, colleagues, and friends, and 35% (61) from the In-service Training and Infection Control Committee.

In the subgroup analysis conducted in the study group, anxiety and depression scores were statistically significantly higher in the COVID-19 Intensive Care Unit healthcare workers compared to healthcare workers in COVID-19 or non-COVID-19 clinics ($p<0.05$).

Both scores in the female sex were significantly higher ($p<0.05$). While there was no significant difference between the single and married group in anxiety score in the study group, depression score was calculated as significantly higher in the single group ($p<0.05$). While the health care worker who received treatment for a psychiatric disease before the disease was 14% (24), there was no significant difference in anxiety score compared to the group of patients with and without previous psychiatric disease, but the depression score was significantly higher in the group without prior diagnosis ($p<0.05$).

Discussion

Healthcare workers who provide care for COVID-19 patients in the COVID-19 pandemic are in the risk group. Therefore, having them infected can have a serious effect in terms of patient care, health system losses, and increased transmission within the hospital. Providing the healthcare workers with protective equipment, and training on the usage of this equipment during patient treatment is crucial in disease prevention. In this study, measuring the perception and knowledge levels of healthcare workers who have recovered from the disease constitutes one of the objectives. These levels of knowledge enlighten the individuals on the effectiveness of the prevention and the approach towards patients. In addition, in health care workers working in COVID clinical and intensive care units, many psychological conditions such as anxiety and depression are encountered as a result of long working hours, heavy workload, busy pace, and concerns of being infected due to direct close contacts with patients, and thereby carrying the disease to friends and family. Hence, this study aimed to measure the depression and anxiety scores of healthcare workers who had recovered from COVID-19 disease.

Similar to previous studies, the majority of the study group surveyed were female gender with 67.7% [2,3]. However, the gender difference between the study and control group was not significant ($p<0.05$). The mean age of the group with the disease of 37.7±10.4 was significantly younger than the control group ($p<0.05$) because the young population is mainly on-call duty and working overtime.

Regarding the work unit, compared to the control group, there was a higher frequency of healthcare workers who had recovered from the disease and worked in the COVID-19 ICU. The high incidence of the disease can be explained by the higher contact risk the group working in the COVID-19 clinic and COVID ICU had. In the literature, the COVID-19 rate was similarly higher in individuals working in clinics with close contact with patients [4].

Reports say that having sufficient knowledge about the disease is effective in preventing the disease [5]. When healthcare workers' sources of information about COVID-19 were evaluated, 9% (15) stated that they received training from news and press, 6% (10) from social media, 45% (79) from the official website of the Ministry of Health, 5% (9) from family, colleagues, and friends, and 35% (61) from the In-service Training and Infection Control Committee. The official website of the Ministry of Health and In-service Training were the main sources of information. In the literature, the percentages of sources of information were reported as 65% for press, 72% for social media, and 78% for government web pages [6].

In the inquiry to determine the level of knowledge and perception of healthcare workers about the disease, meaningful results were obtained in the answer to two questions. The first was "N95 masks must definitely be used in the hospital." and the second was "Prior to entering the treatment room, more than one pair of gloves should be worn and they should be changed before treating every new patient". The number of workers stating that one should use N95 masks in the hospital was higher among the health workers who had recovered from the disease than in the control group ($p<0.05$). Similarly, the number of healthcare workers, who wore two pairs of gloves and believed it was adequate to change only the top pair and care for the next patient was significantly higher in the group who suffered from the disease ($p<0.05$). No lack of information was detected about general information on the disease, transmission routes, and prevention in the health workers who became ill. In the literature data, the level of information about COVID-19 among healthcare workers is reported as 89% [7]. However, a lack of information and compliance related to the usage of protective equipment was detected. Training on hand hygiene, personal protective equipment usage, and contact risks have been held face-to-face by our hospital Infection Control Committee from the beginning of the pandemic, but due to work intensity and shift-on-call work systems, there is not enough participation and compliance with these training.

Psychological impact and increased risk of psychological diseases are expected during pandemics [8]. In a study conducted in China, the depression rate was 50.4%, the anxiety rate was 44.6%, and the sleep disorder rate was 34% in healthcare workers who provided direct care to COVID-19 patients [9]. Similarly, in a study conducted in Pakistan, the depression/anxiety rate in a group consisting of doctors was 43% [8]. When healthcare workers who became ill were evaluated according to the work unit in our study, depression, and anxiety scores were significantly higher in those working in the COVID ICU than those working in other clinics. This was attributed to a greater higher contact risk in these units. This is consistent with the literature data, similar to the studies and other studies of Lai and his colleagues, which found higher rates of depression and anxiety in healthcare workers working on the front lines, i.e. units at high risk of transmission [4,9,10].

The significantly higher scores of BDI and BAI in the female gender can be explained by the females being predominant in the study and control groups [4,9,10,11]. In the study of Ozdemir K et al., health care workers in the operating room were included and the anxiety and depression scores were higher among the female gender during the COVID-19 pandemic [12]. When Amin and his colleagues examined depression and anxiety rates, they did not determine the gender gap between males and females [8].

Regarding marital status, while there was no significant difference between the single and married groups in anxiety score, depression score was calculated as significantly higher in the single group ($p<0.05$). This can be attributed to the anxiety of feeling lonely and not getting care when you get sick.

In the patient group who were previously diagnosed with psychiatric disease and did not receive it, no significant difference was found in terms of anxiety score, and depression score was significantly higher in the group that was not previously diagnosed ($p<0.05$). This can be interpreted as a group of healthcare workers with depression who need it but do not receive psychological support and treatment. In addition, one can say that the pandemic contributes to the development of depression in healthcare workers.

We think that this study is the first to examine the knowledge levels and the depression and anxiety scores of healthcare workers who have tested either positive or negative for COVID-19 in Turkey.

Limitations

Not questioning the professional experience, which is thought to affect the level of knowledge, the risk of transmission, and secondary depression/anxiety scores due to occupational burnout is one of the limitations of this study. Other limitations are not specifying the working hours of health care workers, and not examining the emergency department as a separate area within the units studied.

Conclusion

In adaptation to the pandemic conditions, healthcare workers should be provided with sufficient information regarding the disease, and the annual training on the use of personal protective equipment should be repeated. Psychologically, monitoring and support needs should be met. It has been observed that healthcare workers, especially in risky units, need psychiatric support. The need for supporting healthcare workers working in risky units regarding their working conditions, work duration, and psychiatric monitoring is emphasized in the literature [13]. We believe that national and local information programs and studies for healthcare workers are needed.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Funding: None

Conflict of Interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

References

1. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. Brain Behav Immun. 2020 Oct;89:531-542.
2. Nguyen LH, Drew DA, Graham MS, Joshi AD, Guo CG, Ma W. Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study. Lancet Public Health. 2020; 5: e475–83.
3. Puci MV, Nosari G, Loi F, Puci GV, Montomoli C, Ferraro OE. Risk perception and worries among health care workers in the COVID-19 pandemic: Findings from an Italian survey.

Healthcare. 2020;8:535.
4. Abdel Wahed WY, Hefzy EM, Ahmed MI, Sayed Hamed N. Assessment of Knowledge, Attitudes, and Perception of Health Care Workers Regarding COVID-19, A Cross-Sectional Study from Egypt. J Community Health. 2020;45:1242–1251.
5. McEachan R, Taylor N, Harrison R, Lawton R, Gardner P, Conner M. Meta-analyses of the reasoned action approach (RAA) to understanding health behaviors. Ann Behav Med. 2016;50:592-612.
6. Bhagavathula AS, Aldhaleei WA, Rahmani J, Ashrafi Mabadi M, Kumar Bandari D. Knowledge and Perceptions of COVID-19 Among Health Care Workers: Cross-Sectional Study. JMIR Public Health Surveill. 2020; 6(2): e19160.
7. Zhang M, Zhou M, Tang F, Zhang L, You G. Knowledge, attitude, and practice regarding COVID-19 among healthcare workers in Henan, China. J Hosp Infect. 2020;105(2):183-187.
8. Amin F, Sharif S, Saeed R, Durrani N, Jilani D. COVID-19 pandemic- knowledge, perception, anxiety and depression among frontline doctors of Pakistan. BMC Psychiatry. 2020;20:459.
9. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020;2:3(3): e203976.
10. Huang JZ, Han MF, Luo TD, Ren AK, Zhou XP. Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19. Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2020; 20:38(3):192-195.
11. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. Psychiatry Res. 2020;288:112936.
12. Özdemir K, Mantoğlu B, Kamburoğlu M, Gönüllü E, Küçük F, Çakmak G et al. Depression, anxiety, and stress levels of operating room workers during the COVID-19 pandemic period. Cukurova Medical Journal. 2022;47:1682-1688.
13. Jin YH, Huang Q, Wang YY, Zeng XT, Lou LS, Pan ZY, et al. Perceived infection transmission routes, infection control practices, psychosocial changes, and management of COVID-19 infected healthcare workers in a tertiary acute care hospital in Wuhan: a cross-sectional survey. Military Medical Research. 2020;7:24.

This study was approved by the Ethics Committee of Turkish Ministry of Health and the Hospital's Ethics Committee (Date: 2020-10-22, No: 1033)